

## Abstract of the Disclosure

A method for forming a flowable dielectric layer using a barrier layer on sidewalls of patterned flowable dielectrics, thereby preventing a bridge phenomenon between adjacent contact plugs. The method includes steps of: forming patterns on a semiconductor substrate, wherein narrow and deep gaps are formed therebetween; forming a flowable dielectric layer so as to fill the gaps between the patterns; carrying out an annealing process for densifying the flowable dielectric layer and removing moisture therein; forming contact holes by selectively etching the flowable dielectric layer so as to expose predetermined portions of the semiconductor substrate; forming a barrier layer on sidewalls of the contact holes for preventing micro-pores in the flowable dielectric layer; carrying out a cleaning process in order to remove native oxides and defects on the semiconductor substrate; and forming contact plugs by filling a conductive material into the contact plugs.